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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/747,209	12/22/2000	Wei-Fan Chen	B-4068 618463-2	1081

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LADAS AND PARRY
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EXAMINER

FARAHANI, DANA

ART UNIT	PAPER NUMBER
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2814

DATE MAILED: 06/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/747,209

Applicant(s)

CHEN, WEI-FAN

Examiner

Dana Farahani

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-5, 7-9, 11, 12, 14-17, 18-20, 22, 24, 26, 28-30, 32-35, and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Yu (U.S. Patent 6,476,422).

Regarding claims 1, 11, 17, and 34, Yu discloses in figure 7 (this figure is used to address the subsequent rejections that follow) an electrostatic discharge protection circuit with high trigger current, coupled to a node 46 and a reference potential shown at the right of the substrate 30, the electrostatic discharge protection circuit comprising: a substrate 30 of a first conductivity type, coupled to the reference potential; a well region 32 having a second conductivity type, formed on the substrate and coupled to the node 46; a first doping region 36 having the first conductivity type floated on the well region;

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and a second doping region 38 having the second conductivity type, disposed on the substrate and electrically coupled to the reference potential.

Regarding claims 2 and 18, Yu discloses the electrostatic discharge protection circuit further comprises a third doping area 34 having the second conductivity type, disposed in the well region, electrically coupled to the node, for forming an ohmic connection at the well region.

Regarding claims 3 and 19, Yu discloses the electrostatic discharge protection circuit, further comprises a forth doping region 40 having the first conductivity type, disposed at the surface of the substrate near said well region, electrically coupled to the reference potential.

Regarding claims 4, 14-16, 32-33, and 37, Yu discloses the electrostatic discharge protection circuit wherein the first conductivity is p-type, and the second conductivity is n-type.

Regarding claims 5, 20, and 26, Yu discloses the electrostatic discharge protection circuit, wherein the electrostatic discharge circuit further comprises a fifth conductivity type 54 having the second conductivity type, disposed at the conjunction of the well region and the substrate.

Regarding claims 7-9, 12, 22, 24, 28-30, and 35, Yu discloses the electrostatic discharge protection circuit, wherein the electrostatic discharge protection circuit further comprises a MOS transistor 58 disposed on the substrate and two source/drain regions 54 and 38, wherein one of source/drain regions is electrically coupled to the well region,

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while the other of the source/drain regions, together with the gate, is electrically coupled to the reference potential.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6, 21, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yu, as applied to claims 1, 11, 17, and 34 above, and further in view of Liu et al., hereinafter Liu (U.S. Patent 6,455,898).

Yu discloses the claimed invention, as discussed above, except for a field oxide region adjacent to the fifth region.

Liu discloses a field oxide region, 520 of figure 5B, for the electrostatic discharge protection circuit shown in the figure. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a field oxide region in the Yu structure in order to realize surface isolation of the fifth region in figure 6 of the Yu reference, and the other surface regions shown in the figure.

5. Claims 10, 13, 25, 31, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yu as applied to claims 1, 11, 17, and 34 above, and further in view of Yu (U.S. Patent 5,869,873), hereinafter '873 patent.

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Yu discloses the claimed invention, as discussed above, except for a resistor and capacitors with the connections specified in those claims.

'873 patent discloses, in figures 5 and 6, The electrostatic discharge protection circuit, wherein the electrostatic discharge protection circuit further comprises: a MOS transistor 55 having the first conductivity type, formed on the substrate, comprising a gate 554, and two source/drain regions 53 and 54, wherein one source/drain region is electrically coupled to a N-well region, and the other source/drain region is electrically coupled to the reference potential; a resistor R, its two ends electrically coupled to the gate and the reference potential, respectively; and a capacitor C of figure 6, its two ends electrically coupled to the gate and the node, respectively. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the resistor and capacitor of the '873 patent in Yu's structure in order to make the ESD apparatus of the Yu reference to control the relationship between the coupling voltage of the device and the pad.

Response to Arguments

6. Applicant's arguments filed 3/24/03, with respect to the rejections of claims 1-37 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, new grounds of rejections are made in this Office Action.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dana Farahani whose telephone number is (703)305-1914. The examiner can normally be reached on M-F 9:00AM - 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M Fahmy can be reached on (703)308-4918. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9318 for regular communications and (703)872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

D. Farahani
June 2, 2003

A handwritten signature in black ink, appearing to be 'Long Pham', written in a cursive style.

LONG PHAM
PRIMARY EXAMINER